

WHAT IS CLAIMED IS:

1. A resist development processor comprising:
 - a development processing chamber for storing a resist substrate having an exposed resist on the substrate and for developing the exposed resist by means of a development solvent consisting of a supercritical fluid; and
 - a supercritical fluid container for storing a supercritical fluid, said supercritical fluid container being connected to said development processing chamber through a valve.
2. A resist development processor comprising:
 - a high pressure gas container for storing a high pressure gas of said development solvent, said high pressure gas container being connected to said development processing chamber through a valve; and
 - a liquid container for storing said development solvent, said liquid container being connected through a valve.
3. The resist development processor according to Claim 2 characterized in that said high pressure gas container is provided with a back pressure regulator for ensuring that said development solvent in a gaseous state filled into said container is changed into a gas by opening of said valve, without allowing

said supercritical fluid in said development processing chamber to be liquefied.

4. The resist development processor according to
Claim 1 characterized in that said development
5 processing chamber is provided with a temperature
regulator for ensuring that a high pressure gas in
said development processing chamber is discharged,
with the temperature of gas in said development
processing chamber maintained above the temperature of
10 critical point, thereby allowing the gas to be
discharged without being liquefied.

5. The resist development processor according to
Claim 1 characterized by comprising resist substrate
holding means that prevents said development solvent
15 in liquid state from coming into contact with said
resist substrate, when said liquid development solvent
is introduced into said development processing chamber.

6. The resist development processor according to
Claim 2 characterized in that said development
20 processing chamber is connected through a high
pressure force supply pump, in contact with said
development solvent in liquid state of said liquid
container.

7. The resist development processor according to
25 Claim 1 characterized in that said supercritical fluid

container is connected through a valve and a high pressure force supply pump, in contact with said liquid of the liquid container for storing said liquid development solvent.

5 8. The resist development processor according to Claim 2 characterized in that said high pressure container is connected through a valve, in contact with said gas of the liquid container for storing said liquid and gaseous development solvent.

10 9. The resist development processor according to Claim 1 further comprising a temperature regulator for regulating the difference in the temperature of said development solvent from each vessel, supplied to said development processing chamber.

15 10. A resist development processing method characterized in that the development solvent consisting of supercritical fluid is introduced into a development processing chamber for storing a resist substrate having an exposed resist on the substrate, whereby development is carried out.

20 11. A resist development processing method characterized by comprising the steps of:
 introducing the development solvent consisting of supercritical fluid into a development processing chamber for storing a resist substrate having an

exposed resist on the substrate;
introducing the liquid of the same material as
that of said fluid into said development processing
chamber; and

- 5 removing said supercritical fluid from said
development processing chamber.

12. A resist development processing method wherein
development is performed by introduction of the
development solvent consisting of supercritical fluid
10 into a development processing chamber for storing a
resist substrate having an exposed resist on the
substrate, said resist development processing method
characterized by comprising the steps of:

- 15 filling the development processing chamber with
the development solvent without contacting the resist
substrate;

introducing said supercritical fluid into said
development processing chamber;

20 pumping said development solvent in a liquid state
into said development processing chamber; and

25 removing said supercritical fluid with the
temperature of gas in said development processing
chamber maintained above the temperature of critical
point, without allowing said supercritical fluid to be
liquefied.

13. A resist development processing method comprising the steps of:

introducing liquid carbon dioxide into a development processing chamber for storing a resist substrate having an exposed resist and holding the resist substrate to said gaseous carbon dioxide;

5 introducing supercritical carbon dioxide into said development processing chamber and maintaining it at a specified pressure, thereby allowing said development 10 to be carried out;

pumping liquid carbon dioxide into said development processing chamber and mixing it with said supercritical carbon dioxide;

discharging the supercritical carbon dioxide of 15 said development processing chamber into a high pressure carbon dioxide container filled with high pressure gaseous carbon dioxide, and converting the supercritical carbon dioxide filling said development processing chamber into gaseous form, thereby stopping 20 said process of development; and

removing carbon dioxide of said development in the gaseous state.

14. The resist development processing method according to any one of Claims 10 through 13 25 characterized in that changes in the temperature of

said resist substrate in said development processing chamber do not exceed 10 degrees Celsius.

15. A surface processor comprising:

a processing chamber for storing an object to be
5 processed;

a supercritical fluid container for storing a supercritical fluid, said supercritical fluid container being connected to said processing chamber through a valve;

10 a high pressure gas container for storing the high pressure gas of the same material as that of said fluid, said high pressure gas container being connected to said processing chamber through a valve; and

15 a liquid container for storing a liquid of the same material as that of said fluid, said liquid container being connected through a valve.

16. A surface processing method comprising the steps of:

20 introducing the supercritical fluid filled in the supercritical fluid container, into the processing chamber for storing an object to be processed;

introducing into the said processing chamber the liquid of the same material as that of said fluid
25 filled in the liquid container; and

discharging the supercritical fluid of said processing chamber into the high pressure gas container filled with high pressure gas.